

1 1. (Twice Amended) A method of manufacturing thin film transistors
2 comprising the steps of:

3 (a) forming a plurality of island-shaped semiconductor layers on a substrate
4 having an insulative surface;

5 (i) forming a gate insulating film on each of the semiconductor
6 layers;

7 (ii) forming a gate electrode on the gate insulating film over each of
8 said semiconductor layers;

9 (b) implanting dopant into first regions at outsides of designated for offset
10 regions adjacent to a channel region under said gate electrode in each of said semiconductor
11 layers directly or through a thin insulation film whose thickness is equal to or less than 50nm
12 by ion implantation to form lightly doped regions; and

13 (c) implanting dopant into outer regions within said first regions in each of
14 said semiconductor layers directly or through said thin insulation film to form heavily doped
15 source/drain regions whose impurity concentration is higher than that of said lightly doped
16 regions,

17 wherein said ion implanting steps (b) and (c) are so selected that hydrogen ions
18 are also implanted into said lightly doped regions and said heavily doped source/drain
19 regions, but not into said channel region under said gate electrode, and

20 wherein said dopant cannot substantially be implanted into said offset regions.

1 22. (Amended) A method of manufacturing thin film transistors
2 comprising the steps of:
3 (a) forming a plurality of island-shaped semiconductor layers on a substrate
4 having an insulative surface;
5 (i) forming a gate insulating film on said substrate, said film
6 covering said semiconductor layers;
7 (ii) forming a gate electrode layer on said gate insulating film;
8 (b) implanting dopant into first regions at outsides of regions designated
9 for offset regions adjacent to a channel region in each of said semiconductor layers directly
10 or through a thin insulation film whose thickness is equal to or less than 50nm by ion
11 implantation to form lightly doped regions;
12 (c) implanting dopant into outer regions within said first regions in each of
13 said semiconductor layers directly or through said thin insulation film to form heavily doped
14 source/drain regions whose impurity concentration is higher than that of said lightly doped
15 regions; and
16 (d) irradiating a laser beam directly or through said thin insulation film to
17 said first regions to activate dopants implanted in steps (b) and (c),
18 wherein said dopant cannot substantially be implanted into said offset regions.